Incorporating Queer Understandings of Sex and Gender in Design Research and Practice

Isabel Prochner, PhD student at the Université de Montréal, Canada

Abstract
This paper presents lessons to better incorporate queer understandings of sex and gender in design research and practice. There is much discussion in design literature about how sex and gender are interpreted and attributed in the design process and end products. Discussions revolve around attention toward female and male bodies, and stereotypes of femininity and masculinity. Nevertheless, this work rarely adopts queer understandings of sex and gender, or considers the experiences and identities of queer users. This prevents design research and practice from properly addressing social sustainability imperatives. Project results are based on a multi-part literature review and analysis, focused on industrial design. I highlight key themes surrounding sex and gender in design literature through three examples, and problematize these works in relation to queer understandings of sex and gender. Next, I identify a complementary theoretical perspective and priority for design research and practice, which provides lessons to better incorporate queer understandings of sex and gender in these realms. I end by exemplifying these lessons, their relative potential for social sustainability, and their possible applications.

Keywords
Industrial design; concepts; queer; sex; gender

Introduction
This paper presents a multi-part literature review and analysis of sex, gender and design, and stresses the need to better incorporate queer understandings of sex and gender in design research and practice. There is much discussion and debate about how sex and gender are interpreted, and attributed in the design process and end industrial design products. Key arguments revolve around how female bodies are ignored and how feminine and masculine gender are stereotyped. To illustrate this point, consider products designed for male anthropometrics that are too large for a smaller female body, or products that represent femininity through “shrinking and pinking” (Femme Den, 2012). These are important issues that must be addressed to advance design research and practice and make design processes and end products more socially responsible. This imperative aligns with socially sustainable design, which addresses critical social issues (Bell, 2008), “ethics, values, active citizenship, cultural diversity, holistic perspectives and personal as well as professional responsibility” (McMahon & Bhamra, 2010, p.87). Designers working for social sustainability might strive for more inclusive products that represent the needs of female users, or to eliminate negative stereotypes by designing for more flexible and diverse experiences of femininity.

Nevertheless, this work is limited because it rarely adopts queer understandings of sex and gender or considers the experiences and identities of queer users. Queer understandings of sex and gender challenge binary divisions between female and male and feminine and masculine. Design research and practice cannot fully address socially responsible goals without considering queer users and alternative understandings of sex and gender. For example, the bodies of intersexed people are rarely considered in
product design, and stereotypes of feminine and masculine restrict gender identities that sit between these two extremes. Thus, the objective of this paper is to provide lessons to better incorporate queer understandings of sex and gender in design research and practice. I highlight key themes surrounding sex and gender in current design literature; problematize these works in relation to queer understandings of sex and gender; and, finally, identify a potential complementary theoretical perspective and priority for design research.

Methodology and methods

This project is the outcome of my doctoral learning journey that took place in 2012-2013 during the first 18 months of my studies (see Wisker et al., 2010). This work was centred on critical inquiry, which emphasises contestation, emancipation and change (Gannon & Davies, 2007). My feminist belief system set the specific focus on sex and gender inequality (DeVault, 1996). As an industrial designer and feminist, I have always been uncomfortable with the traditional and normative sex roles and gender identities reflected in product design.

I conducted research in three stages. The first stage focused on issues surrounding women and design and involved a literature review of 256 texts on these topics. Articles and books were broadly selected from sources including the Academic Search Complete database, Design and Applied Arts Index, Gender Studies Database, Contemporary Women’s Studies Database, and the Université de Montréal library catalogue. Search terms were woman, women, girl, sex, gender, female, feminine, femininity, feminism, feminist, design, designer, and designing, and texts were retrieved from a variety of design disciplines like industrial design, architecture, and urban planning. I analysed each text and situated its epistemology, methodology, and subject matter in relation to three concepts: sex, gender, and feminism. These concepts provided a framework to help organize existing literature and understand the breadth of current research. Full justification and argumentation of these concepts is presented in “Shopping for Lenses: The Implications and Potential of ‘Sex,’ ‘Gender’ and ‘Feminist’ Approaches on Design Principles and Practices” by Isabel Prochner and Pierre De Coninck (in press). This review pointed to the limited perspectives toward sex and gender found in current design research, and prompted the second and third stages of my learning journey.

The second stage replaced an emphasis on women with an interest in queer studies, and I narrowed my focus to industrial design research and practice. I identified queer understandings of sex and gender, and used these definitions as an analytic framework to critically explore the results of my literature review on women and design. In this paper, I outline three examples from my literature review to represent a breadth of arguments. The first text represents a relatively rare exploration of female bodies in relation to product design. The second represents a critique against stereotypes of femininity in product design as well as thoughtful guidelines to help designers better connect with women. Finally, the third example showcases conceptual designs that challenge gender hierarchies in product design. While I explore the positive contributions of each work, I also problematize the texts in relation to queer understandings of sex and gender.

The last stage of my learning journey was relatively experimental, and provided lessons to better incorporate queer understandings of sex and gender in design research and practice. I conducted a literature review of the relationships between product design and queer understandings of sex and gender. I identified three works that represent a complementary theoretical perspective and priority for design research and practice; one text identifies the theoretical perspective and priority and the other two exemplify this approach. While these texts do not represent the full breadth of work on this topic, they provide groundwork and inspiration for future explorations. In this paper, I outline these texts and their lessons to better incorporate queer understandings of sex and gender in
design research and practice. I illustrate these lessons by reimagining the three examples from my literature review on women and design. Finally, I broadly evaluate the potential of this model for more socially responsible design research and practice.

Results

**Stages 1 and 2: Critical readings of literature on women and design**

**Definitions and outcomes of the literature review**

Sex refers to biological distinctions between female and male and gender refers to feminine and masculine identities developed socially, culturally and historically. Female sex is typically associated with feminine gender and male sex is typically associated with masculine gender. In contrast, feminism is a critical paradigm to illuminate and challenge dominant and privileged knowledge claims and points of view with the objective to achieve equality between all women and men. I identified feminist perspectives in literature based on their political or critical orientations.

The majority of the 256 texts explored gender and some adopted a feminist approach. In contrast, relatively few texts addressed sex exclusively, which is likely because gender is so pervasive in society, culture, and history. Literature associated with gender addressed space, design movements, design artefacts, the roles of women in design, and the needs of female clients. Arguments often revolved around the dominance of male sex and masculine gender, and the stereotyping of femininity and masculinity in design products. Literature associated with feminism revolved around empowerment of women and explored issues including inclusive design, feminist methodologies, and design activism.

Despite the quantity of literature, the texts represented limited perspectives toward sex and gender. The queer lens challenges binaries in sex and gender; it explores the changeability and “multi-dimensionality of human experience,” which it sees as a “patchwork of multiple identities and situational subjectivities” (Epstein, 2005, p. 68). Through the queer lens, sex is reinterpreted and understood as culturally or socially constructed (e.g., through language; Marchbank & Letherby, 2007). The female/male binary is challenged and sex divisions are seen as flexible and situated along a spectrum between female and male that includes intersexed people (Marchbank & Letherby, 2007). Similarly, gender is seen as flexible and situated along a spectrum between feminine and masculine; from this perspective, an individual can perform different gender identities (Moi, 1999).

**Examples from the literature review**

Gendered Innovations in Science, Health and Medicine, Engineering, and Environment is a research program directed by Londa Schiebinger and based at Stanford University (Schiebinger, Sánchez de Madariaga, & Schraudner, 2011). Contributors to the project use sex and gender analysis as a design tool to “enhance scientific and technological excellence” in each phase of research (Schiebinger & Schraudner, 2011, p. 155). In one of the project's many case studies, the researchers provide an in-depth example of how female bodies have traditionally been ignored in the design process. They conducted a study of male and female crash test dummies used in automobile design and discovered that female bodies have traditionally been ignored in the design process. Until recently, pregnant women were not considered in the design of car safety features like seatbelts, and the foetus was in serious danger in the event of an accident.
This case study is socially responsible by bringing attention to a serious safety issue in product design. It contributes to a larger movement of improving safety standards in automobile design, and will surely inspire higher personal and professional responsibility for industrial designers. This example addresses female sex, unusual in design literature, and emphasizes the need to consider a variety of female bodies in design. Yet, it stops short of examining, for example, transsexual or intersexed bodies. While seatbelt design might not be a safety issue for these users, there are surely other products that are inadequate for this population. Though these issues were likely outside the scope of this case study, they must be addressed thoroughly in design research and practice.

The second example is the Femme Den design lab, which specialises in female consumers and is associated with Smart Design¹ (Femme Den, 2012). Femme Den opposes the simplification and stereotyping of a feminine aesthetic often seen in design that they identify as “shrinking and pinking” (Femme Den, 2012). For example, with this approach, a watch for women would be smaller than a men’s watch and coloured pink. In contrast, Femme Den developed guidelines to help designers better connect with women. Their work represents an in-depth consideration of female sex, feminine gender, and women’s needs and desires. Their guidelines propose highlighting a product’s benefits rather than its features, designing for the female body, considering the experience of a product from purchase to use, deciding how “feminine” a product should be, and considering the user’s life stages from childhood to old age (Rockwood, 2009).

This work can inspire design that is more responsive and representative of women’s needs and desires, and diverse experiences of femininity. Femme Den’s guidelines even encompass the issues with seatbelt design identified in the previous example through their emphasis on the female body and life stages. However, the guidelines maintain several stereotypical assumptions that are challenging from a queer lens. Namely, Femme Den believes that female consumers can be categorised and require, for example, an emotional connection with products. Thus, this work represents a broader, but still limiting view of female users.

Finally, Karin Ehrnberger, Minna Räsänen, and Sara Ilstedt provide a strong and detailed critique of gendered industrial design products and the harmful implications of a gendered approach in their article and research program (2012). They note, for example, that gendered products reproduce a gender hierarchy where masculine products and function are valued over feminine products and form. Further, gendered products reinforce gender stereotypes, roles, and spheres. In response to these issues, the authors redesigned two products—a power drill typically marketed to men and a hand mixer typically marketed to women—by switching their product language. The result was a “masculine” hand mixer called the Mega Hurricane Mixer and a “feminine” power drill called the Dolphia. The authors note that the products’ conceptual designs highlight normally invisible product messages and values.

This work provides valuable analysis of norms in industrial design products, and portrays these important issues through provocative design work. Their work will hopefully inspire changes in design research and practice; their use of product design may be especially effective in communicating this message to practitioners. Ehrnberger, Räsänen, and Ilstedt note the importance to “search for solutions beyond gender-dichotomous thinking” (2012, p. 95), but they don’t represent these issues in their paper. For example, they exchange masculine product language for feminine product language in the power drill design. An extension of this project to represent more spectral views of gender in product language would be valuable.

¹ http://smartdesignworldwide.com/
Stage 3: Lessons to better incorporate queer understandings of sex and gender in design research and practice

Complementary theoretical perspective and priority
This stage of research was inspired by the work of Mark Graham and Erica Rand; both academics have strong and innovative work in the fields of gender and material culture. Graham is a researcher at Stockholm University who focuses on subjects including gender, sexuality, and material culture, and Rand is an American researcher in art and visual culture and women and gender studies. Graham and Rand are not design researchers and refer to material culture rather than design in their texts, but I believe their work can provide a model and inspiration for future investigations in design research and practice.

My proposed complementary theoretical perspective and priority is based on the view that design researchers should incorporate and value queer understandings of sex and gender in their work. This perspective and priority can complement more normative understandings of sex and gender and potentially lead to richer and more complex investigations. Such an approach could be achieved by applying Mark Graham’s (2010a) framework for exploration of gender and material culture. In his view, material culture should be explored from worldly and naïve perspectives. For a worldly perspective and analysis of industrial design products, “we have to enter the world beyond the object to find out how the object was put there” (Graham, 2010a, p. 193). Such an analysis addresses the complex decisions, stakeholders, and power structures that influence design thinking and the design process. In contrast, the naïve perspective focuses on the “personal relationships between social actors and things” that occur once industrial design products are available to the public (Graham, 2010a, p.193). While the worldly perspective is familiar in design research and practice, the naïve perspective is less common. For example, the work of Gendered Innovations, Femme Den, and Ehrnberger, Räsänen, and Ilstedt is rooted mainly in the worldly realm.

I test and exemplify Mark Graham’s (2010a) framework through analysis of Barbie’s Queer Accessories by Erica Rand (1995) and “Things in the Field: Ethnographic Research into Objects and Sexuality” by Mark Graham (2010b) in the paragraphs that follow. These examples show that the naïve realm provides key insights on the interplay between design and queer understandings of sex and gender.

Barbie’s Queer Accessories is a political and academic publication that explores how users position themselves in relation to Barbie and the doll’s potential for queer reposings (Rand, 1995). Barbie is an example of a sexed and gendered product that has an intimate relationship with many users. In her text, Rand explores the history of Barbie and its brand; memories and personal experiences of playing with Barbie; positions toward Barbie; and “subversive reposings” of Barbie for political or artistic ends (p. 10).

Rand determined that both marketing and individual interpretations impact Barbie’s meaning to users. She notes that “we need to be very humble about our own ability to inscribe meanings in objects, to discern the meaning that others attribute to them, or to transfer conclusions about resistance, subversion, and hegemony from person to person, object to object, context to context” (p. 195). Thus, opinions and perspectives toward Barbie aren’t simple or straightforward. Though Barbie is marketed as the epitome of femininity and normative womanhood, users do not necessarily buy into this narrative. Rand refers to users as Barbie’s queer accessories: “The bottom line is that Mattel made a female doll for girls to dress, undress, fondle, and obsess over and unsexed her only halfheartedly, thus making her good-girl rep somewhat laughable and making Barbie easy fodder for any girl with a queer Dream Loft in mind” (p. 195).
This text demonstrates the subjectivity of queer understandings of sex and gender and underscores the need to address the naïve realm. It illustrates users’ creativity and power: their ability to think critically about sexed and gendered products, to modify sexed and gendered products to tell alternative or queer narratives, and to use sexed and gendered products to represent queer identity. These outcomes also hint at potential implications of this complementary theoretical perspective and priority; namely, the important role of users’ creativity and critical thinking in the naïve realm and the need for this to be acknowledged in design research and practice.

Second, in “Things in the Field: Ethnographic Research into Objects and Sexuality,” Graham outlines results of an ethnographic field project where he examined peoples’ possessions as part of a study on material culture and sexuality. He adopted a queer approach to explore ‘those properties of things that are contradictory – literally ‘speak against’ – what we might expect them to say, and their capacity to act as alternative reservoirs of meaning that can highlight conflicts and tensions, and fail to align with normative demands” (2010b, p. 65). In the text, Graham presents four cases involving a relationship between a user and a possession. The examples show that users deploy products to tell a story, but also that products tell their own stories.

A particularly striking case is about the relationship between a woman and a Prada dress. The dress was a gift from the user’s mother, which represents their loving relationship, but also a familiar and social role that constrains her. Though the user does not wear the dress, she keeps it hanging in her closet. Instead, she wears clothes that better represent her sense of self. The clothes she wears as well as the clothes she chooses not to wear support and construct her queer identity and serve as platforms for sex and gender performance.

This example demonstrates the complexity and subjectivity of queer understandings of sex and gender. It explores the stories products tell and the way users can deploy them to tell stories. The example of a woman and her dress demonstrates that selection or rejection of products is a way to support and perform an identity. Similar to Barbie’s Queer Accessories, these outcomes hint at the need to consider users’ creativity and critical thinking in design research and practice.

Lessons for design research and practice
The work by Graham and Rand indicates that design researchers and practitioners should better consider the naïve realm. This realm provides important insights into three key areas. 1) It helps to grasp the complexity and subjectivity of queer understandings of sex and gender. These are impossible to define or predict because each user is different and their identity may change over time. 2) It emphasises users’ creativity and power; that they can think critically about sexed and gendered products. For example, though a design researcher might identify a product as harmful, they should also seek a users’ individual perspective. In addition, sexed and gendered products can be modified to tell alternative or queer narratives. This demonstrates that designers cannot necessarily predict how a product will be used, and that a product’s meaning can change once it enters the naïve realm. 3) It shows that we can use products as building blocks of our identity. Users can manipulate the stories products tell, through, for instance, the way a product is used or positioned in relation to people or other objects. Further, the selection or rejection of products is a way to support or perform an identity. In this sense, the products we don’t like might be as important in our identity as those we enjoy. Further, a variety of products are important in constructing complex and diverse identities.

These lessons point to the importance of a user-centred approach (Keats & Clarkson 2003) where design researchers and practitioners consider users’ needs, wants, and capacities at every stage of a project. Further, they show the value of participatory approaches to incorporate users’ unique experiences and perspectives in design research.
and practice. Participatory approaches have a strong focus on process and community engagement. Participants are encouraged to think critically and become engaged in reflection, and research outcomes typically involve identifying and addressing collective needs and seeking empowerment (Brinton Lykes & Coquillon, 2007). Emphasis on users and participation brings this approach even closer to socially sustainable objectives. Not only will this theoretical perspective and priority better address the complexity of sex and gender, but these researchers and practitioners can become activists by conducting fieldwork, engaging users and addressing their needs (Feldman 2004). For instance, this process can help achieve more inclusive products and eliminate negative stereotypes.

Reimagining the examples from the literature review on women and design

This theoretical perspective and priority can complement more normative understandings of sex and gender and potentially lead to richer and more complex investigations in design research and practice. I explore its potential contributions to the three examples from the literature review on women in design in the following paragraphs.

Lesson one is most relevant to the case study by Gendered Innovations in Science, Health and Medicine, Engineering, and Environment (Schiebinger, Sánchez de Madariaga, & Schraudner, 2011). This case study could benefit from a user-centred and participatory approach to explore the complexity and subjectivity of queer understandings of sex and their implications for product safety. Creativity, power and identity, which are addressed in lessons two and three, are less relevant in this case of a fundamental safety issue.

Femme Den’s work could be complimented with each of the lessons presented above. Their work is already user-centred, but presents a potentially limiting view of female users. They could benefit from participatory work with a large diversity of female users or users with diverse sexes to better represent the subjectivity of sex and gender in their design guidelines. Femme Den partially fulfils lessons two and three through their emphasis on “considering the experience of a product from purchase to use” (Rockwood, 2009). Yet, they could emphasize users’ agency even further by promoting participatory approaches. This would move designers beyond considering users from their position in the worldly realm to actually interacting with users in the naïve realm.

Ehrnberger, Räsänen, and Listedt need to better incorporate the complexity and subjectivity of queer understandings of sex and gender in their work. Yet, beyond this issue, this group demonstrates the ability to modify a product to tell alternative narratives and the role of products in identity. A participatory project where individuals could create their own conceptual designs would be a strong next step in this research program. Such an approach could represent the complexity and subjectivity of sex and gender; users’ creativity and power; and products as building blocks of identity. The outcomes of this project would be a rich contribution to design research and practice on queer understandings of sex and gender and socially sustainable initiatives more generally.

Limits

This rather experimental project has many limitations, but also highlights plenty of directions for future exploration. Each stage of the literature review was broad and could benefit from more targeted exploration. The transition in the second stage between a focus on women and a focus on queer studies was a necessary leap in my learning journey; however, future investigations should be firmly based in queer studies from the beginning. The complimentary theoretical perspective and priority must be empirically tested and its applications to design research and practice should be analysed. Finally, my exploration of queer understandings of sex and gender was basic and left out other rich aspects of queer studies like sexuality and the political, radical, and deconstructive
queer lens (Kemp, 2009). For instance, its reaction against consumerism might contradict the objectives of design research and practice. Each of these related topics has great potential and ought to be considered in detail in future explorations.

Conclusions
These lessons have strong potential to inform more socially sustainable design research and practice that represent queer understandings of sex and gender. They are applicable to projects addressing queer users, but also have potential to enrich more general explorations, such as the three examples from my literature review on women and design. It’s easy to envision how these lessons can challenge traditional and normative sex roles and gender identities reflected in product design. Nevertheless, they can also be applied to other design fields like graphic design or architecture. I am excited to see how this work will evolve over time.

At the beginning of my doctoral studies, I could not have predicted the direction that my learning journey would take. Each phase provided important insights and helped me to map out issues surrounding sex, gender, and design that will guide the rest of my studies. In addition to my own work, I hope that this paper provides inspiration to other design researchers and practitioners either through its literature review, problematics, calls into action, lessons for design, or small contribution toward more socially sustainable work. I look forward to taking part in debates on these important issues.

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References


**Isabel Prochner**

Prochner is a PhD student in design and Vanier Canada Graduate Scholar at the Université de Montréal, Canada. After conducting undergraduate studies in industrial design at the University of Alberta, she explored Alberta’s regional design history for her master’s thesis, for which she was granted a Social Sciences and Humanities Research Council of Canada (SSHRC) award. Her emerging work explores feminism and queer theory in design. She will blend academic research with design creation in her doctoral thesis.